

In the manufacture of the new product metallic sodium, a well-known electrochemical material, is permitted to combine with oxygen in a restrained fashion, yielding a compound somewhat analogous to the rust of iron, but much more active chemically. Great care has to be taken not to allow too concentrated a supply of oxygen to reach the sodium. Even common air, containing scarcely 21 per cent. of oxygen, is too

rich in its undiluted state. The formation of peroxide, usually resulting in such a process, is avoided.

In view of the ability of the new oxide to attack not only common vegetable and animal matter, but metals, solvents, and a host of organic chemicals related to the dye, lacquer, drug and other industries, especially when in the molten state, a wide interest is being taken in its industrial future.

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MEDICINE

## New Anesthetic, Evipan, May Be Useful in Childbirth

**A** WHITE crystalline tasteless powder which puts the patient to sleep in a minute or even less time is one of the new substances discovered in the search for the perfect anesthetic. It is called evipan in Europe and evipal in this country.

It was devised by German scientists. How well it has worked in actual practice was reported to the Congress of Anesthetists by Dr. Hans Widenhorn of the University of Freiburg, Germany, and Drs. Ronald Jarman and A. Lawrence Abel of the Woolwich War Memorial Hospital, England. In the form of a clear solution in water, evipan is injected into a vein and the patient goes quickly and quietly to sleep. There is none of the excitement and nervousness at the beginning of the anesthesia, or the vomiting and nausea afterwards that occur with some other anesthetics such as ether.

The patient awakens quickly from evipan anesthesia which usually lasts for about twenty minutes. When it is necessary to prolong the anesthetic period, Dr. Widenhorn augments the effect of evipan with ether or nitrous oxide. Drs. Jarman and Abel prolonged its effect by repeating the dose.

Evipan is not excreted from the body by passing into the air through the lungs, like ether, but by chemical breakdown in which the liver plays an important part. For this reason evipan is particularly useful for operations on patients suffering from lung disease but should not be used on patients suffering from liver or gall bladder disease. It may also be used in childbirth since with it "something similar to twilight sleep may be obtained," according to Dr. Widenhorn.

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MEDICINE

## Childless Couple's Chance For Family Now Doubled

**W**OMEN who seek medical aid to overcome involuntary childlessness now have double the chance of realizing their natural dream of bearing children of their own, it appears from results obtained at the Evans Memorial Institute, Massachusetts Memorial Hospitals.

The secret of success in bringing the boon of children to previously childless couples lies in recognition of the fact

that childlessness may be due to multiple causes operating in both partners to the childless marriage, Dr. Allan Winter Rowe, director of the institute, told members of the American College of Surgeons at one of the "show me" clinics of their congress.

Fifty out of one hundred couples were helped to have children of their own by Dr. Rowe and his colleagues. Reports in medical literature show that

the best results previously obtained have enabled only twenty-five out of every hundred couples to achieve parenthood. Working with Dr. Rowe in his efforts to overcome involuntary infertility were Dr. Samuel R. Meaker, Dr. Samuel N. Vose and Dr. Charles H. Lawrence.

The first step in the proceedings to help the childless couples was a thorough study of the histories and physical condition of both husband and wife. These studies and examinations showed that both the men and the women were suffering from a number of constitutional and glandular abnormalities. Disorders in varying degrees in both men and women were found in thyroid, pituitary and sex gland functions. Anemia, over- and underweight, depressed energy metabolism, low blood pressure, signs of liver injury indicating toxic conditions, and venereal, tuberculous and other infections were found in both men and women.

Only nine of the men and three of the women were adjudged normal. With some exceptions, no one of the abnormalities found would by itself have prevented the couple from having children, Dr. Rowe explained. But the combination of several of the abnormalities in both partners to the marriage were in his opinion sufficient to cause the childlessness. In order to raise the chance of the couple for having children to its very highest, all the abnormal conditions had to be corrected. The constitutional factors such as anemia, focal infections, depressed energy metabolism, malnutrition and disordered liver function played a major role in contributing to the childlessness, he believes.

Success in "doubling the batting average" of involuntarily childless couples resulted from discovering and correcting all the abnormalities.

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ARCHAEOLOGY

## Fingerprints on Pottery Aid in Tracing Past

**F**INGERPRINT science has come to the aid of archaeologists exploring the ruins of Bible cities. Fingerprints of potters who worked in a Bible town in Palestine have been found impressed in some of their work so plainly that earthen dishes which they made can be sorted out 2,000 to 3,000 years later.

This detective work has been done by Dr. William F. Bade, professor of Semitic literature and languages at the Pacific School of Religion and director

of the Palestine Institute of the Tell en-Nasbeh expedition.

In his laboratory in Berkeley, California, Dr. Bade has been studying pottery jars and fragments which he and his assistants have accumulated in four expeditions to Tell en-Nasbeh, believed to be the site of the Bible city of Mizpah. Mizpah is famous as a city where Samuel judged the forces of the Israelites and where Saul was chosen king.

Debris in the ancient town lies in layers, buried by successive builders who filled in depressions, leveled off ruins, and built their new streets and houses over remains of the previous town. Because this filling in process was often uneven, archaeologists have trouble, Dr. Bade explains, in tracing the same layer of occupation over a 12-acre site, such as Mizpah covers.

Fingerprints have helped solve this problem at Mizpah. Clay jars found in different depths of the mound have proved to be from the hand of the same potter, thus showing that the jars and objects associated with them belonged to a single period of the town's history.

On large, two-handled jars, the potters of Mizpah stamped trade-marks—their own fingerprints, Dr. Bade discovered. This was done apparently to enable them to recognize their own craft-work.

"It is in rare cases possible to make out the lines of the sweat ducts," he explains, and in that case they can be identified by making models of the deep impressions and fitting them to similar prints in other jars.

"I do not for a moment believe that the potters were aware that their fingerprints had the distinctiveness which is

now recognized in the fingerprint system. It is the place and arrangement of the impressions which served as distinguishing marks to them."

In his study of fingerprints, Dr. Bade was assisted by August Vollmer, professor of police administration at the University of California and former Berkeley police chief.

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#### SURGERY

## Sight Restored by Corneas Grafted on Both Eyes

**T**HE ONLY person in the world who has had new corneas successfully grafted onto both eyes attended the meeting of the American College of Surgeons as an unofficial exhibit of British surgical skill. She is Miss Daphne Muir, English novelist, who lost her sight when both corneas were injured in an accident some years ago.

The cornea is not the eye lens, but is a transparent tissue in front of the lens corresponding to the front lens of the camera. Numerous cases have been reported of successful grafting of a new cornea onto one eye but this is said to

be the first successful case of double cornea transplant.

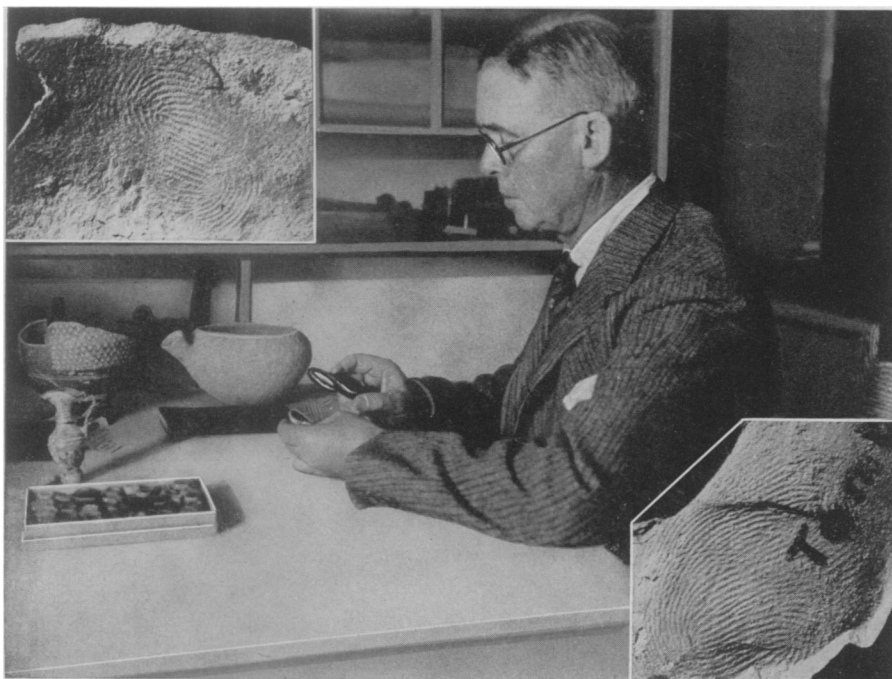
The operation was performed by Dr. Tudor Thomas of Cardiff and London. Dr. Thomas was not present at the meeting and Miss Muir was not on the official program. However, she was there on a visit in another English surgeon's party and consented to be the subject of a demonstration for American doctors specially interested in surgery of the eye.

Miss Muir's vision is not perfect but she can read headlines in newspapers, can read her own correspondence, and can safely go about the familiar streets of her home town and attend to her shopping. The first object shown to her after the operation was the title on the cover of her just-published novel which was, appropriately enough, "Very Heav- en."

#### New Pressure Technic

The new corneas, taken from eyes which had to be removed from patients suffering from other conditions, were attached by a new technic for this operation. Instead of stitching the new corneas directly to the underlying tissue on Miss Muir's eyes, Dr. Thomas held them in place with two strands of surgical silk applied something like a cross-stitch in embroidery. After carefully removing the injured cornea from Miss Muir's eye, he placed four stitches in diagonally opposite pairs, the silk between each pair crossing to form a large X. The new, transparent cornea was slipped under and the ends of the X or cross-stitch were drawn tight and this held the new tissue in place. The method is called the pressure technic of grafting.

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#### FINGERPRINTS 2000 YEARS OLD

The long arm of archaeological science has reached back 2,000 years and more to identify Bible potters who left fingerprints in their clay wares. Dr. Bade is shown examining pottery which he unearthed at ruins of Mizpah. The prints shown are of the finger of the same person impressed on lamps in a tomb at Mizpah dating from about the beginning of the Christian era.